wherein

x is an integer ranging from 0 to 13;

y is an integer ranging from 0 to 5;

z is 1;

R_1, R_2 and R_3 are the same or different and represent hydrogen or a straight chain or branched lower alkyl; and

R′ and R″ are the same or different and represent hydrogen, phenyl or a halogen and pharmaceutically acceptable salts thereof.

53. (New) A method according to claim 52 wherein the propargylamine increases the sensitivity of a tumor to an antineoplastic drug.

54. (New) A method according to claim 53 wherein the tumor is a drug resistant tumor.

55. (New) A method according to claim 52 wherein the propargylamine protects normal cells from the cytotoxic effects of the antineoplastic drug.

56. (New) A method according to claim 52 wherein y is 1.

57. (New) A method according to claim 56 wherein the propargylamine is R-2-heptyl-methyl propargylamine (R-2HMP).

58. (New) A method according to claim 52 wherein the propargylamine is selected from the group consisting of N-(1-Propyl) N-methylpropargylamine; N-(2-Propyl) N-methylpropargylamine; N-(1-Butyl) N-methylpropargylamine; N-(1-Pentyl) N-methylpropargylamine; N-(1-Hexyl) N-methylpropargylamine; N-(1-Heptyl) N-methylpropargylamine; N-(1-Octyl) N-methylpropargylamine; N-(1-Nonyl) N-methylpropargylamine; N-(1-Decyl) N-methylpropargylamine; N-(1-Undecyl) N-methylpropargylamine; N-(1-Dodecyl) N-methylpropargylamine; (R)-N-(2-Butyl) N-methylpropargylamine; (R)-N-(2-Pentyl) N-methylpropargylamine; (R)-N-(2-Hexyl) N-methylpropargylamine; (R)-N-(2-Heptyl) N-methylpropargylamine; (R)-N-(2-Octyl) N-methylpropargylamine; (R)-N-(2-Octyl) N-methylpropargylamine; (R)-N-(2-Decyl) N-methylpropargylamine; (R)-N-(2-Undecyl) N-methylpropargylamine; and (R)-N-(2-Dodecyl) N-methylpropargylamine.

59. (New) A method according to claim 52, wherein y is 0.

60. (New) A method according to claim 59 wherein the propargylamine is R-2-heptyl-propargylamine (R-2 HPA).

61. (New) A method according to claim 59 wherein the propargylamine is selected from the group consisting of N-(1-Propyl) propargylamine; N-(2-Propyl) propargylamine; N-(1-Butyl) propargylamine; N-(1-Pentyl) propargylamine; N-(1-Hexyl) propargylamine; N-(1-Heptyl) propargylamine; N-(1-Octyl) propargylamine; N-(1-Nonyl) propargylamine; N-(1-Decyl) propargylamine; N-(1-Undecyl) propargylamine; N-(1-Dodecyl) propargylamine; (R)-N-(2-Butyl) propargylamine; (R)-N-(2-Pentyl) propargylamine; (R)-N-(2-Hexyl) propargylamine; (R)-N-(2-Heptyl) propargylamine; (R)-N-(2-Octyl) propargylamine; (R)-N-(2-Octyl) propargylamine; (R)-N-(2-Decyl) propargylamine; (R)-N-(2-Undecyl) propargylamine; and (R)-N-(2-Dodecyl) propargylamine.

62. (New) A method according to claim 52 wherein the propargylamine is R-deprenyl.

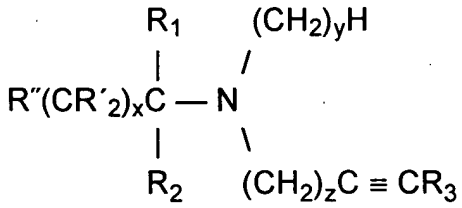
63. (New) A method according to claim 52 wherein the propargylamine is R-desmethyldeprenyl.

64. (New) A method according to claim 52 wherein the animal is a human.

65. (New) A method for enhancing the activity of an antineoplastic drug comprising administering an effective amount of Rasagiline to an animal in need thereof.

66. (New) A method according to claim 52 wherein the propargylamine is a chiral compound and is the R-enantiomer.

67. (New) A method for treating cancer comprising administering an antineoplastic drug and an effective amount of a propargylamine to an animal in need thereof, wherein the propargylamine is of the general formula I



wherein

x is an integer ranging from 0 to 13;

y is an integer ranging from 0 to 5;

z is 1;

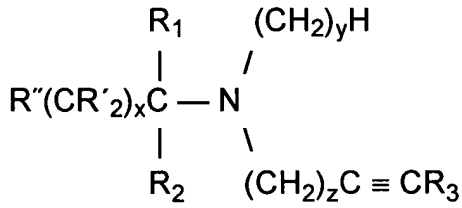
R_1, R_2 and R_3 are the same or different and represent hydrogen or a straight chain or branched lower alkyl; and

R′ and R″ are the same or different and represent hydrogen, phenyl or a halogen and pharmaceutically acceptable salts thereof.

68. (New) A method according to claim 67 wherein the antineoplastic drug is selected from the group consisting of cytosine arabinoside, cis-platinum, cyclophospamide, adriamycin, daunomycin, and 5-fluorouracil.

69. (New) A method according to claim 66 wherein the propargylamine is a chiral compound and is the R-enantiomer.

70. (New) A pharmaceutical composition for treating cancer comprising an antineoplastic drug and an effective amount of a propargylamine of the general formula I:



wherein

x is an integer ranging from 0 to 13;

y is an integer ranging from 0 to 5;

z is 1;

R_1, R_2 and R_3 are the same or different and represent hydrogen or a straight chain or branched lower alkyl; and

R′ and R″ are the same or different and represent hydrogen, phenyl or a halogen and pharmaceutically acceptable salts thereof.

71. (New) A pharmaceutical composition according to claim 70 wherein y is 1.

72. (New) A pharmaceutical composition according to claim 71 wherein the propargylamine is R-2-heptyl-methyl propargylamine (R-2HMP).

73. (New) A pharmaceutical composition according to claim 71 wherein the propargylamine is selected from the group consisting of N-(1-Propyl) N-methylpropargylamine; N-(2-Propyl) N-methylpropargylamine; N-(1-Butyl) N-methylpropargylamine; N-(1-Pentyl) N-methylpropargylamine; N-(1-Hexyl) N-methylpropargylamine; N-(1-Heptyl) N-methylpropargylamine; N-(1-Octyl) N-methylpropargylamine; N-(1-Nonyl) N-methylpropargylamine; N-(1-Decyl) N-methylpropargylamine; N-(1-Undecyl) N-methylpropargylamine; N-(1-Dodecyl) N-methylpropargylamine; (R)-N-(2-Butyl) N-methylpropargylamine; (R)-N-(2-Pentyl) N-methylpropargylamine; (R)-N-(2-Hexyl) N-methylpropargylamine; (R)-N-(2-Heptyl) N-methylpropargylamine; (R)-N-(2-Octyl) N-methylpropargylamine; (R)-N-(2-Octyl) N-methylpropargylamine; (R)-N-(2-Decyl) N-methylpropargylamine; (R)-N-(2-Undecyl) N-methylpropargylamine; and (R)-N-(2-Dodecyl) N-methylpropargylamine.

74. (New) A pharmaceutical composition according to claim 70, wherein y is 0.

75. (New) A pharmaceutical composition according to claim 74 wherein the propargylamine is R-2-heptyl-propargylamine (R-2HPA).

76. (New) A pharmaceutical composition according to claim 74 wherein said propargylamine is selected from the group consisting of N-(1-Propyl) propargylamine; N-(2-Propyl) propargylamine; N-(1-Butyl) propargylamine; N-(1-Pentyl) propargylamine; N-(1-Hexyl) propargylamine; N-(1-Heptyl) propargylamine; N-(1-Octyl) propargylamine; N-(1-Nonyl) propargylamine; N-(1-Decyl) propargylamine; N-(1-Undecyl) propargylamine; N-(1-Dodecyl) propargylamine; (R)-N-(2-Butyl) propargylamine; (R)-N-(2-Pentyl) propargylamine; (R)-N-(2-Hexyl) propargylamine;